AMENDMENTS TO THE SPECIFICATION:

Page 1, the first paragraph was amended as follows:

[0001] The present application is a divisional of co-pending U.S. Patent Application Serial No. 09/495,064 filed January 31, 2000 (U.S. Patent No. 6,624,940; issued September 23, 2003), which was a continuation of U.S. Patent Application Serial No. 09/017,923 filed February 3, 1998 (U.S. Patent No. 6,055,106; issued April 25, 2000), the contents of all of which are incorporated herein by reference.

Page 8, the first full paragraph, continuing to page 9, was amended as follows:

[0034] In the case of the light beam 12 being a collimated laser beam and having its axis coincident with the optical axis 22, the light beam 12 enters the back aperture 24 of the objective lens 20 and is brought to a focus in the imaging volume 32 at the center point c of the objective lens focal plane 30. When the axis of the light ~~5beam~~ beam 12 is displaced by the angle ø with respect to the optical axis 22, beam axis 31 and the optical axis 22 coincide at the center point B of the back aperture 12. This displacement enables translation of the optical trap across the field of view by an amount that depends on the angular magnification fo the objective lens 20. The two variables, angular displacement ø and varying convergence of the light beam 12, can be used to form the optical trap at selected positions within the imaging volume 32. A multiple number of the optical traps 33 can be arranged in different locations provided that multiple beams of light 12 are applied to the back aperture 24 at the different angles ø and with differing degrees of collimation.

Page 10, the fifth full paragraph, continuing to page 11, was amended as follows:

The diffractive optical element 40 of FIG. 3 is shown as being normal to the input light beam 12, but many other arrangements are possible. For example, in Fig. 4 the light beam 12 arrives at an oblique angle ~~βrelative~~ relative to the optic axis 22 and not at a normal to the diffractive optical element 40. In this embodiment, the diffracted beams 44 emanating from point A will form optical traps 50 in focal plane 52 of the imaging volume 32 (seen best in FIG. 1). In this arrangement of the optical tweezer system 10 an undiffracted portion 54 of the input light beam 12 can be removed from the optical tweezer system 10. This configuration thus enables processing less background light and improves efficiency and effectiveness of forming optical traps.

Page 14, the first paragraph was amended as follows:

[0050] An illustration of an application of the invention is shown in FIGS. 7A and 7B. The diffractive optical element 40 is designed to interact with the single light beam 12 to create a 4x4 array of collimated beams. A 100 mW frequency doubled diode-pumped Nd:YAG laser operating at 532 nm provides a Gaussian TEMoo form for the light beam 12. In FIG 7A the field of view is illuminated in part by laser light backscattered by sixteen silica spheres trapped in the array's sixteen primary optical tweezers 10. The 1μm diameter spheres are dispersed in water and placed in a sample volume between a glass microscope slide and a 170 μm thick glass coverslip. The tweezer array is projected upward through the coverslip and is positioned in a plane 8μm above the coverslip and more than 20 μm below the upper microscope slide[[,]]. The silica spheres are stably trapped in three-dimensions in each of the sixteen optical tweezers 10.